





PRELIMINARY REPORT INDUSTRY SERIES

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1982 Census of Mineral Industries

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CLAY, CERAMIC, AND REFRACTORY MINERALS (Industries 1452, 1453, 1454, 1455, and 1459)

This report presents preliminary statistics from the 1982 Census of Mineral Industries. The 1982 data are subject to change in the final reports, which will be issued at a later date. Final data will be presented first in paperbound reports and then in a bound volume of Subject, Industry, and Geographic Area Statistics. The final volume will include a comprehensive discussion of the concepts and definitions used in the census.

The total value of shipments and receipts for Industry 1452, Bentonite, was \$96 million in 1982, while the value of shipments of products classified as being primary to this industry was \$96 million. Value added by mining was \$57 million. Total employment for the industry increased to 1.4 thousand employees in 1982, an increase of approximately 8 percent from 1977. Establishments in this industry are those primarily engaged in mining, milling, or otherwise preparing bentonite. Establishments engaged in preparing bentonite which do not include a mine are classified in manufacturing, Industry 3295, Minerals and Earths, Ground or Otherwise Treated.

The total value of shipments and receipts for Industry 1453, Fire Clay, was \$28 million in 1982, while the value of shipments of products classified as being primary to this industry was \$27 million. Value added by mining was \$17 million. Total employment for the industry remained at .4 thousand employees from 1977 to 1982. Establishments in this industry are those primarily engaged in mining, milling, or otherwise preparing fire clay, including stoneware clay and diasporite. Establishments producing fire clay as a principal product in conjunction with the manufacture of cement or clay refractory or pottery products are classified in Major Group 32, Stone, Clay, Glass, and Concrete Products.

The total value of shipments and receipts for Industry 1454, Fuller's Earth, was \$81 million in 1982, while the value of shipments of products classified as being primary to this industry was \$80 million. Value added by mining was \$53 million. Total employment for the industry increased to 1.3 thousand employees in 1982, an increase of approximately 18 percent from 1977. Establishments in this industry are those primarily engaged in mining, milling, or otherwise preparing fuller's earth.

The total value of shipments and receipts for Industry 1455, Kaolin and Ball Clay, was \$520 million in 1982, while the value of shipments of products classified as being primary to this industry was \$516 million. Value added by mining was \$291 million. Total employment for the industry increased to 5 thousand employees in 1982, an increase of approximately



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6 percent from 1977. Establishments in this industry are those primarily engaged in mining, milling, or otherwise preparing kaolin and ball clay, including china clay, paper clay, and slip clay.

The total value of shipments and receipts for Industry 1459, Clay and Related Minerals, N.E.C., was \$144 million in 1982, while the value of shipments of products classified as being primary to this industry was \$139 million. Value added by mining was \$77 million. Total employment for the industry decreased to 2.0 thousand employees in 1982, a decrease of approximately 20 percent from 1977. Establishments in this industry are those primarily engaged in mining, milling, or otherwise preparing clay, ceramic, or refractory minerals, not elsewhere classified, such as common clay and shale, and andalusite, aplite, brucite, dumortierite, feldspar, kyanite, magnesite, nepheline syenite, olivine (non-gem), pinite, sillimanite, and topaz (non-gem). Establishments producing common clay and shale in conjunction with the manufacture of structural clay products are classified in Major Group 32, Stone, Clay, Glass, and Concrete Products.

Establishment data were tabulated based on industry definitions contained in the 1972 Standard Industrial Classification (SIC) Manual and its 1977 supplement.¹ The industry statistics (employment, payroll, value of shipments and receipts, cost of supplies, etc.) are reported for each establishment as a whole. Industry aggregates of these data measure not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities performed by the same establishments. This fact should be taken into account in comparing industry statistics (tables 1, 2, 4a, and 4b) with product statistics (table 3) showing shipments by all industries of the primary products of the specified industry. (See appendix for a discussion of the difference between value of shipments and receipts for the industry and value of product shipments.) All dollar figures shown in this report are in current dollars for the years specified and have not been adjusted for changes in price levels. Therefore, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The methods of data collection which include the use of administrative records data are discussed in detail in the appendix. Small single-unit companies (the cutoff varied by industry) were not mailed a questionnaire. For these establishments (and a small number of larger establishments whose reports were not received at the time of tabulation), some employment, payroll, and receipt data were obtained from administrative records of other government agencies. These data were then used in conjunction with industry averages to estimate the statistics for the administrative-record and nonresponse establishments.

Single-unit establishments in the bentonite industry with less than 10 employees were not mailed questionnaires; for the fire clay industry this cutoff was 4 employees; for the fuller's earth industry it was 4 employees; for the kaolin and ball clay industry it was 9 employees; and for the clay and related minerals, n.e.c., industry it was 6 employees. These establishments in the bentonite industry accounted for 2 percent of the total value of shipments and receipts; in the fire clay industry they accounted for 2 percent; in the fuller's earth industry they accounted for less than 1 percent; in the kaolin and ball clay industry they accounted for less than 1 percent; and in the clay and related minerals, n.e.c., industry they accounted for 3 percent.

The following abbreviations and symbols are used in the tables in this publication:

- Represents zero.
- (D) Withheld to avoid disclosing data for individual companies.
- (NA) Not available.

(S) Withheld because estimate did not meet publication standards on the basis of either the response rate or a consistency review.
(X) Not applicable.
(Z) Less than half the unit shown.
n.e.c. Not elsewhere classified.
n.s.k. Not specified by kind.
r Revised.
SIC Standard Industrial Classification.

Other abbreviations, such as lb, gal, yd, and bbl, are used in the customary sense. Where the term "tons" only is used, it refers to short tons of 2,000 pounds; where the figures are expressed in tons of 2,240 pounds, the unit of measure is specified as "long tons" or "l. tons."

¹Standard Industrial Classification Manual: 1972. For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 041-001-00066-6. 1977 Supplement. Stock No. 003-005-00176-0.

Table 1. Historical Industry Statistics: 1982 and Earlier Years

(For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix)

Year	Companies (number)	Establishments during year		All employees		Production, development, and exploration workers			Value added by mining (million dollars)	Cost of supplies used, purchased machinery installed, etc. (million dollars)	Value of shipments and receipts (million dollars)	Value of net ship- ments and receipts ¹ (million dollars)	Quantity of primary products ²	Capital expendi- tures (million dollars)
		Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (mil- lions)	Wages (million dollars)						
INDUSTRY GROUP 145, CLAY, CERAMIC, AND REFRACORY MINERALS														
1982 ³	4158	214	93	10.1	204.5	7.3	15.6	135.7	495.6	477.0	867.9	848.3	14 604.0	104.7
1977 ³	(NA) 255	103	10.0	135.6	7.9	17.0	91.4	358.1	295.1	590.9	586.2	21 243.5	62.3	
1972 ³	209	309	111	9.1	78.4	7.3	16.4	57.1	198.1	124.8	293.4	291.9	16 609.3	29.5
1967 ³	(NA) 356	121	9.3	57.7	7.5	16.5	42.9	154.7	87.7	218.3	207.6	18 657.8	24.0	
1963.....	349	423	111	8.3	42.2	7.1	15.1	34.1	113.6	62.7	161.6	159.2	16 458.0	14.6
1958.....	4396	490	112	8.8	36.2	7.3	14.9	26.9	87.4	48.6	122.7	121.7	13 834.0	13.2
INDUSTRY 1452, BENTONITE														
1982 ³	17	33	16	1.4	26.0	.8	1.6	15.0	57.2	49.6	95.5	(D)	2 882.8	11.3
1977 ³	16	30	18	1.3	17.7	.9	1.8	10.1	56.1	38.2	82.4	(D)	3 519.9	12.0
1972 ³	24	37	19	.9	8.2	.6	1.4	4.9	19.9	13.0	31.1	(D)	2 794.6	1.9
1967 ³	(NA) 32	16	.9	5.4	.6	1.4	3.4	13.2	8.8	21.2	(D)	1 951.8	.9	
1963.....	31	44	16	.8	4.1	.6	1.5	3.1	11.4	8.0	18.1	(D)	1 629.0	1.4
1958.....	29	41	15	.7	2.9	.5	1.1	2.0	12.2	5.7	16.8	(D)	51 558.0	1.1
INDUSTRY 1453, FIRE CLAY														
1982 ³	25	33	5	.4	7.2	.3	.7	5.1	16.9	13.9	27.7	(D)	1 372.2	3.0
1977 ³	28	47	6	.4	5.1	.4	.8	3.7	26.5	15.0	38.5	(D)	1 485.6	3.0
1972 ³	52	80	6	.5	4.1	.5	.9	3.2	14.9	5.9	19.7	19.7	2 259.4	1.1
1967 ³	(NA) 99	12	.8	5.1	.7	1.4	4.2	18.5	6.2	23.1	22.2	2 886.0	1.5	
1963.....	134	155	14	1.0	4.6	.9	1.6	3.8	12.6	6.6	17.1	16.9	3 552.0	2.2
1958.....	136	182	19	1.5	6.0	1.3	2.2	5.0	14.5	6.2	18.6	18.4	4 000.0	2.1
INDUSTRY 1454, FULLER'S EARTH														
1982 ³	10	13	10	1.3	19.4	.9	2.0	12.1	53.4	37.1	80.9	(D)	1 089.2	9.6
1977 ³	8	10	8	1.1	11.0	1.0	2.0	9.2	27.8	25.2	47.8	47.8	1 032.9	5.2
1972 ³	10	14	11	1.2	7.8	1.1	2.4	6.5	18.0	12.6	26.5	26.5	919.8	4.0
1967 ³	(NA) 16	11	1.1	5.1	1.0	2.0	4.1	15.6	11.0	22.5	(D)	761.2	4.1	
1963.....	15	15	9	.8	3.1	.7	1.4	2.4	9.1	5.1	13.0	(D)	462.0	1.2
1958.....	13	14	6	.7	2.4	.5	1.1	1.7	6.0	3.3	8.7	(D)	285.0	.6
INDUSTRY 1455, KAOLIN AND BALL CLAY														
1982 ³	28	44	34	5.0	115.4	3.7	8.1	76.7	291.2	298.3	520.2	511.9	6 305.5	69.4
1977 ³	28	44	34	4.7	71.1	3.6	8.0	44.6	185.7	146.8	300.8	(D)	5 987.2	31.6
1972 ³	31	49	29	3.9	34.8	3.0	6.7	24.6	93.2	58.6	136.1	(D)	4 990.5	15.7
1967 ³	(NA) 63	34	3.7	24.1	2.9	6.4	16.7	65.1	34.4	87.9	86.5	4 468.0	11.6	
1963.....	39	48	28	3.3	17.7	2.9	6.1	14.5	49.8	21.5	66.1	65.1	3 582.0	5.2
1958.....	41	53	26	3.4	14.0	2.7	5.7	9.7	31.0	15.6	42.4	(D)	2 580.0	4.2
INDUSTRY 1459, CLAY, CERAMIC, AND REFRACORY MINERALS, N.E.C.														
1982 ³	78	91	28	2.0	36.5	1.6	3.2	26.8	76.9	78.1	143.6	134.8	2 954.3	11.4
1977 ³	102	124	37	2.5	30.6	2.0	4.3	23.7	62.0	69.8	121.4	119.7	9 217.9	10.4
1972 ³	102	129	46	2.6	23.5	2.1	4.9	17.9	52.1	34.7	80.0	79.4	5 645.0	6.8
1967 ³	(NA) 146	48	2.8	18.0	2.4	5.3	14.5	42.3	27.3	63.5	59.7	8 629.0	6.0	
1963.....	139	161	44	2.5	12.7	2.1	4.5	10.2	30.6	21.4	47.4	(D)	7 097.0	4.7
1958.....	177	200	46	2.6	10.8	2.2	4.7	8.5	23.6	17.8	36.2	(D)	5 411.0	5.3

Note: For data prior to 1958, see 1963 Census of Mineral Industries, volume I, table 1 of industry chapter.

¹Represents gross shipments less minerals received from other establishments for preparation and value of resales. For service industries, represents total receipts less value of resales.

²Represents thousand short tons.

³Beginning in 1967, data for single-unit establishments without paid employees were excluded from the census.

⁴Represents sum of figures shown for separate industries and may include some duplication due to the same company operating in more than one industry.

⁵Includes crude bentonite produced in other industries amounting to less than 1 percent of total shown.

Table 2. Industry Statistics for Selected States and Type of Operation: 1982 and 1977

(For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix)

Industry, geographic area, and type of operation	1982											1977		
	Establishments during year		All employees		Production, development, and exploration workers			Value added by mining (million dollars)	Cost of supplies used, purchased machinery installed, etc. (million dollars)	Value of shipments and receipts (million dollars)	Capital expenditures (million dollars)	All employees ² (1,000)	Value added by mining (million dollars)	
	Total (number)	With 20 employees or more (number)	Number ² (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)							
E ¹														
INDUSTRY 1452, BENTONITE														
Geographic Area														
United States..	-	33	16	1.4	26.0	.8	1.6	15.0	57.2	49.6	95.5	11.3	1.3	56.1
Illinois.....	-	2	1	AA	(D)	-	-	-	-	-	-	-	AA	(D)
South Dakota.....	-	2	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
Wyoming.....	-	11	8	.6	12.1	.5	1.1	9.8	39.7	26.4	58.9	7.2	CC	(D)
Type of Operation														
Producing establishments.....	-	30	16	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	1.3	56.1
Mines only.....	E2	8	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
Open pit.....	E2	8	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
Mines with preparation plants.....	-	17	13	.8	15.7	.6	1.3	11.8	52.3	45.8	88.0	10.1	1.0	51.8
Open pit.....	-	17	13	.8	15.7	.6	1.3	11.8	52.3	45.8	88.0	10.1	1.0	51.8
Undistributed ³	-	5	2	BB	(D)	-	-	-	-	-	-	-	AA	-
INDUSTRY 1453, FIRE CLAY														
Geographic Area														
United States..	-	33	5	.4	7.2	.3	.7	5.1	16.9	13.9	27.7	3.0	.4	26.5
South Carolina.....	-	1	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Type of Operation														
Producing establishments.....	-	32	5	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Mines only.....	E2	23	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
Open pit.....	E2	23	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
Mines with preparation plants.....	-	9	4	.3	5.2	.2	.5	3.9	13.9	11.2	22.5	2.5	.3	18.4
Open pit.....	-	9	4	.3	5.2	.2	.5	3.9	13.9	11.2	22.5	2.5	.3	18.4
INDUSTRY 1454, FULLER'S EARTH														
Geographic Area														
United States..	-	13	10	1.3	19.4	.9	2.0	12.1	53.4	37.1	80.9	9.6	1.1	27.8
Florida.....	-	2	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Georgia.....	-	7	5	.7	9.0	.5	1.2	6.5	33.3	20.8	52.1	2.1	CC	(D)
Type of Operation														
Producing establishments.....	-	13	10	1.3	19.4	.9	2.0	12.1	53.4	37.1	80.9	9.6	1.1	27.8
Mines only.....	-	3	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	-	-
Open pit.....	-	3	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	-	-
Mines with preparation plants.....	-	9	8	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	1.1	27.8
Open pit.....	-	9	8	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	1.1	27.8

See footnotes at end of table.

Table 2. Industry Statistics for Selected States and Type of Operation: 1982 and 1977—Con.

(For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix)

Industry, geographic area, and type of operation	1982										1977			
	Establishments during year		All employees		Production, development, and exploration workers			Value added by mining (million dollars)	Cost of supplies used, purchased machinery installed, etc. (million dollars)	Value of shipments and receipts (million dollars)	Capital expenditures (million dollars)	All employees ² (1,000)	Value added by mining (million dollars)	
	Total (number)	With 20 employees or more (number)	Number ² (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)							
INDUSTRY 1455, KAOLIN AND BALL CLAY														
Geographic Area														
United States..	-	44	34	5.0	115.4	3.7	8.1	76.7	291.2	298.3	520.2	69.4	4.7	185.7
Georgia.....	-	17	14	3.8	85.0	3.1	6.7	67.2	249.1	270.7	459.4	60.4	3.6	157.8
New Jersey.....	-	5	4	CC (D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	-
South Carolina.....	-	5	5	AA (D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Tennessee.....	E1	5	5	BB (D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
Type of Operation														
Producing establishments.....	-	44	34	5.0	115.4	3.7	8.1	76.7	291.2	298.3	520.2	69.4	4.7	185.7
Mines with preparation plants.....	-	31	28	4.4	96.3	3.7	7.9	75.6	287.5	294.9	514.9	67.6	4.4	182.1
Open pit.....	-	31	28	4.4	96.3	3.7	7.9	75.6	287.5	294.9	514.9	67.6	4.4	182.1
Undistributed ³	-	6	4	CC (D)	-	-	-	-	-	-	-	-	.2	-
INDUSTRY 1459, CLAY, CERAMIC, AND REFRACTORY MINERALS, N.E.C.														
Geographic Area														
United States..	-	91	28	2.0	36.5	1.6	3.2	26.8	76.9	78.1	143.6	11.4	2.5	62.0
Alabama.....	E1	6	2	.1	2.8	.1	.1	1.5	3.2	2.2	4.4	.9	.2	5.8
Georgia.....	-	2	2	AA (D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.1	2.9
Nevada.....	-	2	2	BB (D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
North Carolina.....	-	6	4	.3	3.4	.2	.5	2.2	6.4	7.5	13.4	.5	BB	(D)
Texas.....	-	4	3	AA (D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
Virginia.....	-	3	3	AA (D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
Type of Operation														
Producing establishments.....	-	85	27	EE (D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	2.5	62.0
Mines only.....	E1	53	4	.4	8.1	.3	.7	6.0	13.8	14.2	25.5	2.5	CC	(D)
Open pit.....	E1	53	4	.4	8.1	.3	.7	6.0	13.8	14.2	25.5	2.5	CC	(D)
Mines with preparation plants.....	-	31	23	EE (D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	1.9	48.4
Open pit.....	-	29	22	1.3	24.7	1.2	2.3	19.8	61.5	61.0	114.1	8.5	EE	(D)
Combination and other.....	-	2	1	AA (D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	-	-

¹Some payroll and sales data for small single-unit companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census forms. These data were then used in conjunction with industry averages to estimate statistics shown for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of figures shown: E1--10 to 19 percent; E2--20 to 29 percent; E3--30 to 39 percent; E4--40 to 49 percent; E5--50 to 59 percent; E6--60 to 69 percent; E7--70 to 79 percent; E8--80 to 89 percent; E9--90 percent or more.

²Some statistics are withheld to avoid disclosing data for individual companies. However, if employment is 100 or more, number of establishments is shown and employment size range is indicated by one of the following symbols: AA--100 to 249 employees; BB--250 to 499 employees; CC--500 to 999 employees; EE--1,000 to 2,499 employees; FF--2,500 employees or more.

³Includes data for separately operated auxiliary establishments which were not classified by type of operation.

Table 3. Products or Services for Selected States: 1982 and 1977

(Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix.)

Product or service code	Geographic area and product or service	1982 shipments or receipts for services		1977 shipments or receipts for services	
		Quantity	Value (million dollars)	Quantity	Value (million dollars)
	BENTONITE				
	United States				
1452- --	Bentonite.....	(X)	95.5	(X)	82.0
14521 00	Crude bentonite ¹1,000 s. tons..	721.4	7.6	414.3	2.8
14522 00	Prepared bentonite.....do.	2,187.2	87.9	3,105.6	77.3
14520 00	Bentonite, n.s.k. ²	(X)	(Z)	(X)	1.9
	Wyoming				
1452- --	Bentonite.....	(X)	57.8	(X)	43.8
14521 00	Crude bentonite ¹1,000 s. tons..	(D)	(D)	(D)	(D)
14522 00	Prepared bentonite.....do.	(D)	(D)	1,726.6	42.8
	FIRE CLAY				
	United States				
1453- --	Fire clay.....	(X)	26.7	(X)	41.6
14531 00	Crude fire clay ¹ ³1,000 s. tons..	899.5	3.8	936.7	10.2
14532 00	Prepared fire clay.....do.	476.7	21.5	754.3	28.9
14530 00	Fire clay n.s.k. ²	(X)	1.4	(X)	2.5
	FULLER'S EARTH				
	United States				
14540 00	Fuller's earth.....1,000 s. tons..	1,106.4	79.8	1,032.9	47.8
	Georgia				
14540 00	Fuller's earth.....1,000 s. tons..	633.5	52.0	(NA)	(NA)
	KAOLIN AND BALL CLAY				
	United States				
1455- --	Kaolin and ball clay.....	(X)	516.4	(X)	294.5
14551 00	Crude kaolin and ball clay ¹1,000 s. tons..	(D)	(D)	455.6	4.8
14552 00	Prepared kaolin and ball clay.....do.	5,965.4	506.7	5,935.7	291.1
14550 00	Kaolin and ball clay, n.s.k. ²	(X)	(D)	(X)	2.6
	Georgia				
1455- --	Kaolin and ball clay.....	(X)	416.0	(X)	(NA)
14551 00	Crude kaolin and ball clay ¹1,000 s. tons..	(D)	(D)	(D)	(D)
14552 00	Prepared kaolin and ball clay.....do.	(D)	(D)	4,232.1	249.1
14550 00	Kaolin and ball clay, n.s.k. ²	(X)	(Z)	(X)	(NA)
	CLAY, CERAMIC, AND REFRactory MINERALS, N.E.C.				
	United States				
1459- --	Clay, ceramic, and refractory minerals, n.e.c.....	(X)	138.5	(X)	120.2
14596 00	Feldspar (crude, crushed or ground).....1,000 s. tons..	702.9	24.4	819.0	20.3
14597 --	Common (miscellaneous) clay and shale.....do.	2,035.3	42.8	7,874.0	41.8
14597 11	Crude common (miscellaneous) clay and shale ³do.	249.6	2.4	2,932.1	6.8
14597 21	Prepared common (miscellaneous clay and shale).....do.	1,785.7	40.4	4,941.9	35.0
14599 --	Other clay, ceramic, and refractory minerals, including magnesite and brucite.....do.	1,027.7	53.7	2,185.9	45.3
14599 11	Other crude clay, ceramic, and refractory minerals, including magnesite and brucite.....do.	(D)	(D)	322.2	3.1
14599 21	Other prepared clay, ceramic, and refractory minerals, including magnesite and brucite.....do.	(D)	(D)	1,863.7	42.2
14590 00	Clay, ceramic, and refractory minerals, n.e.c., n.s.k. ⁵	(X)	(D)	(X)	12.8

See footnotes at end of table.

Table 3. Products or Services for Selected States: 1982 and 1977 - Con.

(Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix)

Product or service code	Geographic area and product or service	1982 shipments or receipts for services		1977 shipments or receipts for services	
		Quantity	Value (million dollars)	Quantity	Value (million dollars)
	Alabama				
1459 - --	Clay, ceramic, and refractory minerals, n.e.c.....	(X)	3.1	(X)	(NA)
14597 - --	Common (miscellaneous) clay and shale.....1,000 s. tons..	(D)	(D)	(NA)	(NA)
14597 11	Crude common (miscellaneous) clay and shale ³do..	(D)	(D)	(NA)	(NA)
14597 21	Prepared common (miscellaneous clay and shale).....do..	(D)	(D)	(NA)	(NA)
14599 - --	Other clay, ceramic, and refractory minerals, including magnesite and brucite.....do..	(D)	(D)	(NA)	(NA)
14599 21	Other prepared clay, ceramic, and refractory minerals, including magnesite and brucite.....do..	(X)	(D)	(X)	(NA)
	North Carolina				
1459 - --	Clay, ceramic, and refractory minerals, n.e.c.....	(X)	13.6	(X)	(NA)
14596 00	Feldspar (crude, crushed, or ground).....1,000 s. tons..	(D)	(D)	444.1	11.0
14597 - --	Common (miscellaneous) clay and shale.....do..	(D)	(D)	(NA)	(NA)
14597 21	Prepared common (miscellaneous clay and shale).....do..	(D)	(D)	(NA)	(NA)
14599 - --	Other clay, ceramic, and refractory minerals, including magnesite and brucite.....do..	(D)	(D)	(NA)	(NA)
14599 21	Other prepared clay, ceramic, and refractory minerals, including magnesite and brucite.....do..	(D)	(D)	(NA)	(NA)
14590 00	Clay, ceramic, and refractory minerals, n.e.c., n.s.k. ⁵do..	(X)	(D)	(X)	(NA)

¹Includes value for small companies (estimates were made from administrative-record data rather than collected from respondents).

²Represents value for establishments that did not report detailed data.

³Excludes quantity of crude clay mined and used at establishments classified in manufacturing industries.

⁴Represents net shipments obtained by subtracting minerals received for preparation from gross shipments.

⁵Includes value for establishments that did not report detailed data and estimates for small companies (estimates were made from administrative-record data rather than collected from respondents).

Table 4a. Selected Supplies, Minerals Received for Preparation, and Purchased Machinery Installed: 1982 and 1977

(Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix)

Supply code	Industry and supply consumed	1982		1977	
		Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 1452, BENTONITE				
	Selected supplies used, minerals received for preparation, and purchased machinery installed.....	(X)	28.9	(X)	29.7
145091	Minerals or ores for preparation:				
	Crude clay, ceramic, and refractory minerals received for preparation.....1,000 s. tons..	(D)	(D)	(D)	(D)
145091	Crude clay, ceramic, and refractory minerals mined and prepared at same establishment.....do..	2,670.1	(X)	2,751.5	(X)
353020	Purchased machinery installed, including mobile loading and transportation equipment.....	(X)	11.0		
353030	Parts and attachments (except those listed elsewhere) for construction, mining, and conveying equipment; and for preparation machinery.....	(X)	4.6	(X)	8.0
289210	Supplies used:				
	Explosive materials (including ammonium nitrate) and blasting accessories.....	(X)	(D)	(X)	(D)
331201	Steel mill shapes and forms (such as plates, sheets, roof bolts, bars, rails, wheels, pipe, tubing, wire products, and structural shapes).....	(X)	(D)	(X)	(D)
970099	All other supplies.....	(X)	12.1	(X)	15.3
974000	Undistributed--minerals, purchased machinery, parts, attachments, and supplies used ¹	(X)	.7	(X)	2.8
	INDUSTRY 1453, FIRE CLAY				
	Selected supplies used, minerals received for preparation, and purchased machinery installed.....	(X)	8.5	(X)	6.7
145091	Minerals or ores for preparation:				
	Crude clay, ceramic, and refractory minerals received for preparation.....1,000 s. tons..	(D)	(D)	476.3	(X)
145091	Crude clay, ceramic, and refractory minerals mined and prepared at same establishment.....do..	669.6	(X)		
353020	Purchased machinery installed, including mobile loading and transportation equipment.....	(X)	1.9		
353030	Parts and attachments (except those listed elsewhere) for construction, mining, and conveying equipment; and for preparation machinery.....	(X)	.6	(X)	3.4
289210	Supplies used:				
	Explosive materials (including ammonium nitrate) and blasting accessories.....	(X)	(D)	(X)	(Z)
331201	Steel mill shapes and forms (such as plates, sheets, roof bolts, bars, rails, wheels, pipe, tubing, wire products, and structural shapes).....	(X)	(D)	(X)	(Z)
970099	All other supplies.....	(X)	3.5	(X)	1.9
974000	Undistributed--minerals, purchased machinery, parts, attachments, and supplies used ¹	(X)	(D)	(X)	(D)
	INDUSTRY 1454, FULLER'S EARTH				
	Selected supplies used, minerals received for preparation, and purchased machinery installed.....	(X)	13.1	(X)	12.6
145091	Minerals or ores for preparation:				
	Crude clay, ceramic, and refractory minerals received for preparation.....1,000 s. tons..	(D)	(D)	-	-
145091	Crude clay, ceramic, and refractory minerals mined and prepared at same establishment.....do..	1,814.4	(X)	1,828.0	(X)
353020	Purchased machinery installed, including mobile loading and transportation equipment.....	(X)	3.4		
353030	Parts and attachments (except those listed elsewhere) for construction, mining, and conveying equipment; and for preparation machinery.....	(X)	2.3	(X)	5.3
289210	Supplies used:				
	Explosive materials (including ammonium nitrate) and blasting accessories.....	(X)	-	(X)	-
331201	Steel mill shapes and forms (such as plates, sheets, roof bolts, bars, rails, wheels, pipe, tubing, wire products, and structural shapes).....	(X)	(D)	(X)	(D)
970099	All other supplies.....	(X)	6.1	(X)	6.6
974000	Undistributed--minerals, purchased machinery, parts, attachments, and supplies used ¹	(X)	(D)	(X)	(D)

See footnotes at end of table.

Table 4a. Selected Supplies, Minerals Received for Preparation, and Purchased Machinery Installed: 1982 and 1977—Con.

(Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix)

Supply code	Industry and supply consumed	1982		1977	
		Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 1455, KAOLIN AND BALL CLAY				
	Selected supplies used, minerals received for preparation, and purchased machinery installed.....	(X)	163.9	(X)	88.8
145091	Minerals or ores for preparation: Crude clay, ceramic, and refractory minerals received for preparation.....1,000 s. tons..	(D)	(D)	(D)	(D)
145091	Crude clay, ceramic, and refractory minerals mined and prepared at same establishment.....do..	9,773.4	(X)	9,465.0	(X)
353020	Purchased machinery installed, including mobile loading and transportation equipment.....	(X)	69.3		
353030	Parts and attachments (except those listed elsewhere) for construction, mining, and conveying equipment; and for preparation machinery.....	(X)	36.0	(X)	34.0
289210	Supplies used: Explosive materials (including ammonium nitrate) and blasting accessories.....	(X)	(Z)	(X)	(D)
331201	Steel mill shapes and forms (such as plates, sheets, roof bolts, bars, rails, wheels, pipe, tubing, wire products, and structural shapes).....	(X)	(D)	(X)	(D)
970099	All other supplies.....	(X)	44.5	(X)	(D)
974000	Undistributed--minerals, purchased machinery, parts, attachments, and supplies used ¹	(X)	(D)	(X)	50.9
	INDUSTRY 1459, CLAY, CERAMIC, AND REFRACtORY MINERALS, N.E.C.				
	Selected supplies used, minerals received for preparation, and purchased machinery installed.....	(X)	44.2	(X)	40.7
145091	Minerals or ores for preparation: Crude clay, ceramic, and refractory minerals received for preparation.....1,000 s. tons..	338.6	3.1	250.5	1.7
145091	Crude clay, ceramic, and refractory minerals mined and prepared at same establishment.....do..	5,728.1	(X)	11,699.5	(X)
353020	Purchased machinery installed, including mobile loading and transportation equipment.....	(X)	7.0		
353030	Parts and attachments (except those listed elsewhere) for construction, mining, and conveying equipment; and for preparation machinery.....	(X)	6.6	(X)	13.7
289210	Supplies used: Explosive materials (including ammonium nitrate) and blasting accessories.....	(X)	1.5	(X)	.6
331201	Steel mill shapes and forms (such as plates, sheets, roof bolts, bars, rails, wheels, pipe, tubing, wire products, and structural shapes).....	(X)	1.7	(X)	3.5
970099	All other supplies.....	(X)	14.6	(X)	18.3
974000	Undistributed--minerals, purchased machinery, parts, attachments, and supplies used ¹	(X)	9.7	(X)	2.8

¹Represents cost for establishments that did not report detailed data, including establishments that were not mailed a form.

Table 4b. Fuels Consumed by Type, 1982 and 1977, and End-of-Year Fuel Stocks, 1982

(For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix)

Fuel code	Industry and fuel consumed	1982 consumption		1982 end-of-year stocks ¹ (quantity)	1977 consumption	
		Quantity	Delivered cost (million dollars)		Quantity	Delivered cost (million dollars)
INDUSTRY 1452, BENTONITE						
121005	Fuels used.....	(X)	8.6	(X)	(X)	4.4
	Coal-bituminous, lignite, and anthracite.....1,000 s. tons..	(D)	(D)	(D)	(D)	(D)
291141	Fuel oil:					
	Distillate (light) grade numbers 1, 2, 4, and light diesel fuel.....1,000 bbl..					
291151	Residual (heavy) grade numbers 5 and 6 and heavy diesel fuel.....1,000 bbl..	47.7	2.1	4.1	(D)	(D)
131157	Gas--natural, manufactured, and mixed.....bil. cu. ft..	.8	3.0	(X)	(D)	(D)
291111	Gasoline.....mil. gal..	(D)	(D)	(Z)	.2	.1
960018	Other fuels--liquefied petroleum gas, coke, wood, and other.....	(X)	(D)	(X)	(X)	(Z)
977000	Undistributed fuels ²	(X)	(D)	(X)	(X)	(D)
INDUSTRY 1453, FIRE CLAY						
121005	Fuels used.....	(X)	2.9	(X)	(X)	4.8
	Coal-bituminous, lignite, and anthracite.....1,000 s. tons..	(D)	(D)	(D)	-	-
291141	Fuel oil:					
	Distillate (light) grade numbers 1, 2, 4, and light diesel fuel.....1,000 bbl..	(D)	(D)	(D)	(D)	(D)
291151	Residual (heavy) grade numbers 5 and 6 and heavy diesel fuel.....1,000 bbl..	(D)	(D)	(D)	(D)	(D)
131157	Gas--natural, manufactured, and mixed.....bil. cu. ft..	.5	1.5	(X)	(D)	(D)
291111	Gasoline.....mil. gal..	(Z)	.1	(Z)	.1	.1
960018	Other fuels--liquefied petroleum gas, coke, wood, and other.....	(X)	(D)	(X)	(X)	(Z)
977000	Undistributed fuels ²	(X)	.1	(X)	(X)	.1
INDUSTRY 1454, FULLER'S EARTH						
121005	Fuels used.....	(X)	17.4	(X)	(X)	9.1
	Coal-bituminous, lignite, and anthracite.....1,000 s. tons..	-	-	-	-	-
291141	Fuel oil:					
	Distillate (light) grade numbers 1, 2, 4, and light diesel fuel.....1,000 bbl..	(D)	(D)	(D)	114.8	1.6
291151	Residual (heavy) grade numbers 5 and 6 and heavy diesel fuel.....1,000 bbl..	(D)	(D)	(D)	194.6	2.5
131157	Gas--natural, manufactured, and mixed.....bil. cu. ft..	3.5	14.7	(X)	2.6	4.2
291111	Gasoline.....mil. gal..	.6	.7	(D)	.6	.3
960018	Other fuels--liquefied petroleum gas, coke, wood, and other.....	(X)	(D)	(X)	(X)	(D)
977000	Undistributed fuels ²	(X)	(Z)	(X)	(X)	(D)
INDUSTRY 1455, KAOLIN AND BALL CLAY						
121005	Fuels used.....	(X)	59.4	(X)	(X)	28.1
	Coal-bituminous, lignite, and anthracite.....1,000 s. tons..	(D)	(D)	(D)	(D)	(D)
291141	Fuel oil:					
	Distillate (light) grade numbers 1, 2, 4, and light diesel fuel.....1,000 bbl..					
291151	Residual (heavy) grade numbers 5 and 6 and heavy diesel fuel.....1,000 bbl..	203.9	7.4	73.8	721.8	10.9
131157	Gas--natural, manufactured, and mixed.....bil. cu. ft..	12.7	47.8	(X)	11.6	14.3
291111	Gasoline.....mil. gal..	(D)	(D)	(Z)	1.0	.5
960018	Other fuels--liquefied petroleum gas, coke, wood, and other.....	(X)	.1	(X)	(X)	(D)
977000	Undistributed fuels ²	(X)	.1	(X)	(X)	1.7

See footnotes at end of table.

Table 4b. Fuels Consumed by Type, 1982 and 1977, and End-of-Year Fuel Stocks, 1982—Con.

(For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix)

Fuel code	Industry and fuel consumed	1982 consumption		1982 end-of-year stocks ¹ (quantity)	1977 consumption	
		Quantity	Delivered cost (million dollars)		Quantity	Delivered cost (million dollars)
	INDUSTRY 1459, CLAY, CERAMIC, AND REFRACTORY MINERALS, N.E.C.					
121005	Fuels used.....	(X)	25.8	(X)	(X)	19.1
	Coal--bituminous, lignite, and anthracite.....1,000 s. tons..	149.7	6.4	9.0	94.6	2.4
291141	Fuel oil:					
	Distillate (light) grade numbers 1, 2, 4, and light diesel fuel.....1,000 bbl..	{ 180.5	6.6	{ 35.1	289.7	4.8
291151	Residual (heavy) grade numbers 5 and 6 and heavy diesel fuel.....1,000 bbl..	{ 180.5	6.6	{ 35.1	(D)	(D)
131157	Gas--natural, manufactured, and mixed.....bil. cu. ft..	1.9	8.7	(X)	3.7	8.4
291111	Gasoline.....mil. gall..	.4	.5	(Z)	.8	.5
960018	Other fuels--liquefied petroleum gas, coke, wood, and other.....	(X)	1.3	(X)	(X)	(D)
977000	Undistributed fuels ²	(X)	2.3	(X)	(X)	2.0

¹Fuel stocks were collected for the first time in 1982.

²Represents cost for establishments that did not report detailed data, including establishments that were not mailed a form.

APPENDIX

Scope and Coverage and Explanation of Terms

SCOPE AND COVERAGE

Establishment Basis of Reporting

The census of mineral industries covers each mining establishment of firms with one paid employee or more operating in the United States. A firm operating more than one establishment is required to file a separate report for each location. Companies engaged in distinctly different lines of activity at one location are asked to submit separate reports if records permit such a separation and the activities are of significant size.

Statistics for employment and payroll for individual industries and industry groups also include employment and payroll figures for administrative offices, warehouses, storage facilities, and other auxiliary establishments servicing mining establishments. Respondents were asked to file separate reports for any separately operated auxiliary establishments. Classification of employment and payroll data at such auxiliary establishments was based on the mining establishments served.

For oil and gas field operations and for contract services, the basis for reporting was different from the "establishment" basis used for other types of mining. Firms operating oil and gas wells, drilling wells, or exploring for oil and gas for their own account, were required to submit a separate report for each State or offshore area adjacent to a State in which it conducted such activities and to include employment, production, and capital expenditures data at the county level. Firms which supplied contract services for oil and gas field operations or for mining establishments were required to submit one report covering all such activities in the United States and to include information on receipts for services by State and county. These consolidated reports were then allocated to county establishments based on the data reported at the county level.

Use of Administrative Records

From a universe of 60,000 mining establishments, approximately 12,000 small single establishment companies were not mailed a questionnaire. For these establishments, some employment, payroll, and receipts data were obtained from the administrative records of other agencies. Selection of the small establishment nonmail cases was done on an industry-by-industry basis, and a variable cutoff was used to determine those establishments for which administrative records were to be used in place of a census report. This information was then used in conjunction with industry averages to estimate the statistics for administrative-record and nonresponse establishments. The value of shipments and receipts and cost of supplies were not distributed among specific products and supplies for these establishments, but were included in the product and supply "not specified by kind" categories. Overall, establishments for which administrative records data were used accounted for less than 3 percent of total value of shipments.

Value of Shipments and Receipts for the Industry Compared to Value of Product Shipments

Figures for value of shipments and receipts represent the total shipments and receipts for all establishments classified

in this industry and include products primary to the industry, products classified as primary in other industries but secondary to this industry, and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments represents products classified as primary to this industry that were shipped by all mining and manufacturing establishments, regardless of their industry classification.

EXPLANATION OF TERMS

All employees—This item includes all full-time and part-time employees on the payrolls of operating mineral establishments for any part of the pay period including the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacation during these pay periods. Officers of the corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for the midmonth payroll periods of March, May, August, and November.

Payroll—This item includes all forms of compensation; such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if it is a corporation; it excludes payments to the proprietor or partners, if it is an unincorporated concern. Respondents were told that in reporting they could follow the definition of payroll used for calculating the Federal withholding tax.

Production-, development-, and exploration-worker hours—This item represents all hours that production, development, and exploration workers worked both on active days during which there was production or development work and on inactive days when only guards, inspectors, repairpersons, and other maintenance persons were on duty. It includes all hours worked or paid for at the mining operations, except hours for paid vacations, holidays, or sick leave, when the employee was not at the establishment. Included are actual overtime hours, not straight-time equivalent hours. Hours of working proprietors or partners are excluded.

Cost of supplies used, purchased machinery installed, etc.—This cost includes supplies, minerals received for preparation, and purchased machinery installed, fuels and electric energy used, contract work done by others, and cost of products bought and resold without further processing. It includes charges to both the current and capital accounts. It also includes the cost of items used during 1982, whether they were purchased, withdrawn from inventories, or received from other establishments of the company. Supplies and equipment used in mine development, plant expansion, and capitalized repairs, which are chargeable to fixed assets accounts, were included, as were supplies furnished without charge to contractors for

use at the mining operation and supplies sold to employees for use at the establishment. No data on such costs as advertising, insurance, telephone, and research and consulting services of other establishments; or on overhead costs, such as depreciation charges, rent, interest, and royalties were included in this item. For selected supplies and fuels and for electric energy, both quantity and cost data were requested. The cost data refer to direct charges actually paid or payable (after discounts) for items used during the year. Freight charges and other direct charges, incurred by the establishment in acquiring the item, are included. Where the company's records did not show actual amounts used, they were asked to approximate use by adding purchases (or receipts) during the year to beginning inventory and subtracting ending inventory.

Specific supplies used and minerals prepared—In addition to the total cost of supplies used and purchased machinery installed, etc., which every establishment was required to report, information was also collected on the consumption of major supplies used in mining. These inquiries were restricted to supplies which were important parts of the cost of production, exploration, and development of a particular industry and for which cost information was available from the firms' records.

On report forms for almost all mineral industries, except the contract services industries, a uniform inquiry was included on minerals prepared at the reported establishments. Figures were obtained on minerals prepared from three sources: (1) crude minerals mined at the establishment (quantity); (2) crude minerals received from others (quantity and cost); and (3) crude minerals received for preparation on a custom or toll basis (quantity and estimated value).

Establishments consuming less than a specified amount (usually \$25,000) were not requested to report separately the cost of a supply. Also, the cost of supplies for small establishments for which administrative records were used was estimated as "not specified by kind."

Specific fuels used and stocks on hand—This item includes the quantity and cost of fuels used in mining. For most industries, every establishment was required to report separate quantity and cost figures for purchased coal, distillate fuel oil, residual fuel oil, gas, and gasoline, and a cost figure for "other fuels," as shown in table 4b. The cost of fuels for small establishments for which administrative records were used were imputed as "not specified by kind."

In addition, figures for stocks of purchased fuels on hand at the end of the year were reported for the first time in 1982. Every establishment was required to report the total quantity of unexpended fuel it had on hand, including emergency reserves, at the end of the year. Excluded are fuels to be used as feedstocks or raw materials.

Value added by mining—This measure of mining activity is derived by subtracting the total cost of supplies used, purchased machinery installed, etc., from the sum of the value of shipments and receipts (mining products plus receipts for services rendered) and total capital expenditures.

This statistic avoids the duplication in value of shipments and receipts, which results from the use of products of some establishments as supplies, energy sources, or materials by others. Moreover, it provides a measure of value added, not only in mineral production, but also in the development of mineral properties. For these reasons, it is considered to be the best value measure for comparing the relative economic importance of mining among industries and geographic areas.

Value of shipments and receipts—This item includes the values, f.o.b. mine, well, or plant (exclusive of freight and taxes), of all primary and secondary products shipped, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sale of scrap, and sale of products bought and resold without further processing. Included are all items produced by the establishments and sold, transferred to other plants of the same company, or shipped on consignment.

In the case of multiunit companies, the firm was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., including not only the direct costs of production, but also a reasonable proportion of "all other costs" (including company overhead) and profit.

For industry and industry group totals, some duplication is introduced by the inclusion of materials transferred from one establishment to another for mineral preparation. Wherever value of shipments and receipts is shown without further specification, it represents gross shipments.

Shipments of individual products—In the 1982 Census of Mineral Industries, information was collected on the output of about 200 individual mineral product items. In general, the figures of the 1982 and 1977 mineral censuses were confined to separate totals for each crude and each prepared mineral. Where significant, separate shipments figures were also obtained for crude minerals going to preparation plants and those going to consumers.

Figures were collected on both quantity and value of shipments. Shipments included commercial shipments and transfers of products to other operations of the same company. For products which are used to a significant extent within the same establishment for power or heat, and for minerals mined and prepared in the same establishment, total production or separate data on production for such uses were collected. Typically, production was also collected for products for which there are usually significant differences between the total production and total shipments as a result of stock changes.

For service industries, the amount received or due for services performed during 1982 was collected as a measure of output. For mine operators who also perform services, the amount received for such services was added to the total value of products shipped to determine total value of shipments and receipts for each establishment.

Capital expenditures—This item covers expenditures made during the year for development and exploration of mineral properties, for construction, and for purchased machinery chargeable to fixed assets accounts of the mineral establishment. They are the type for which depreciation, depletion, or Office of Minerals Exploration accounts are ordinarily maintained. Capital expenditures during 1982 were to be determined as "additions completed during the year plus construction in progress at the end of the year minus construction in progress at the beginning of the year." Reported capital expenditures were to include work done by contract, as well as by the mine forces. Expenditures for machinery and equipment were to include those made for replacement purposes, as well as those for additions to capacity. Excluded from these expenditures were costs of maintenance and repairs charged as current operating expense and expenditures for land and mineral rights.

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